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94-32

June 14, 1994

Office of the Secretary
Federal Communications Commission
1919 M Street NW
Washington, DC 20554

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JUN 15 1994

RE: Comments to FCC Notice of Inquiry FCC 94-97

Dear Mr. Canton,

FCC MAIL ROOM

Of the proposed 50 MHz spectrum to be made available, the 2390-2400 MHz and the 2402-2417 MHz bands offer the most for near term potential for emerging private sector wireless services. It is important though, to consider the following:

1. The proposed bands should be combined into one 2390 - 2417 MHz band with provisions to protect the amateur radio satellite service band 2400 - 2402 MHz.
2. The FCC rules and standards should be adopted such that any new service coexist with the current and emerging Part 15 ISM band wireless services and technologies.
3. Any new proposed application for the 2402-2417 MHz band that hinders existing part 15 users will adversely affect US competitiveness.
4. Spread spectrum technology should be used to achieve maximum utilization of these bands.

There are many compelling arguments in favor of the mentioned considerations.

In regards to consideration 1 - combined 2390-2417 MHz band:

Combination of the two mentioned bands makes sense given the quality of the spectrum in the 2402 - 2417 band and recent FCC decisions concerning the PCS band. In addition, combining the two bands into one band would allow the development of more competitive applications, thereby enhancing the value of the spectrum.

As reported in the NTIA special publication 94-27 "Preliminary Spectrum Reallocation Report", there is considerable background noise within the 2402-2417 MHz band. The value, of this band, is not very commercially attractive, given the nature of the interference sources within the ISM band. Combining the two bands would increase the spectrum available offsetting some of the interference issues resulting from the ISM band.

The rational for the decision made on June 9, 1994 by the FCC to combine the PCS band would also apply in this case. Design of the equipment would be simpler and more cost effective. The wider band could offer more potential applications for which the same equipment may be used.

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A combined band would offer more services. Some of these services could include wireless WANs, point to point telephony trunks, as well as provide a less costly means to relocate current 2 GHz users .

Certain provisions would have to be made to minimize interference to the 2400-2402 amateur band. Technically these provisions are not daunting. Most of the new applications are terrestrial and would probably have minimum affect on amateur satellite services. Consequentially, spurious and spectrum splatter would only have to meet the current ISM in band requirements.

Consideration 2 is very important- Coexistence :

In regards to the ISM band, coexistence would require that the new services comply to most of the existing FCC part 15.247 spread spectrum rules. Using spread spectrum techniques would allow higher frequency reuse and take advantage of developing wireless technologies.

Adopting spread spectrum rules similar to FCC part 15.247 should would allow many more services to be operate concurrently in the same band. Concurrent use of the band would foster competition among like services as well as allow different services to be offered. In addition, time bounded access management of the spectrum might be considered to provide access to the public safety community.

Common spread spectrum rules would also minimize the concern of the part 15 users in the ISM band. Interference would be minimal. The only issue would be the affect of higher radiated power that may be required for some services in the 2390 -2417 MHz band. Part 15 products and services are primarily intended for local coverage such as offices, warehouses and etc. Most of these products are designed to coexist with other interference sources such as microwave ovens. As long as frequency reuse rules are consistent then part 15 unlicensed users concerns will be allayed.

Current spread spectrum technologies could be used for both the ISM band users as well as the 2390-2417 MHz uses. Many commercial concerns, including GEC Plessey Semiconductors, are developing wireless technologies to provide the emerging wireless services intended to operate in the 2400-2483.5 MHz ISM band. Extending the operation of this technology to 2390 MHz is feasible. Common technology would reduce development time and reduce equipment costs through economy of scale.

Consideration 3 - US competitiveness:

As mentioned, the 2402-2417 MHz band falls into the ISM band. Any proposed service that has the potential to limit part 15 unlicensed users may impact US competitiveness. Worldwide availability of this band motivates the development of products for international export sales. Confusion as to the usefulness of the ISM band may postpone or delay such export products.

Reducing the usable bandwidth for part 15 users will affect wireless service performance and limit the potential to improve US productivity. Rather, any new proposed service should be set up to augment part 15 users. Wireless LANs and local point to point data communications are the primary applications for part 15 use in the ISM band. New services could include wireless WANs that could be seamlessly integrated with part 15 applications. Logically, such seamless operation would improve productivity.

Consideration 4 - Spectrum utilization :

Given that the information age is upon us, public access to this wireless technology is a valid issue. Only through common technologies and common standards will the economy of scale allow for low cost wireless products and services to be made available to the general public. Again spread spectrum technologies would allow public services to coexist with commercial and public safety services. When considering private sector applications some thought should be given on how the general public may benefit.

Conclusion:

Several arguments have been presented to combine the 2390-2400 MHz band and the 2402- 2417 MHz band. A case has been made to employ spread spectrum techniques to allow efficient spectrum reuse for multiple commercial, public and safety wireless services. Furthermore, these spread spectrum techniques should be consistent with the existing frequency reuse standards of the ISM band. Common technologies may then be used and result in lower cost solutions. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Frank Della Corte", written in a cursive style.

Frank Della Corte
US Wireless LAN Applications Manager